

show the changes made to the previous version of the claims, is filed herewith.

REMARKS

In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims are not anticipated under 35 U.S.C. § 102, and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicants respectfully request that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.

The applicants will now address each of the issues raised in the outstanding Office Action.

Objections

Claims 1-15 stand objected to as including the same reference character used more than once to refer to two separate elements. Claims 3, 4, 7, 8, 11 and 12 were objected to as including acronyms. The applicants respectfully request that the Examiner reconsider and withdraw these objections in light of the foregoing corrective amendments.

Rejections under 35 U.S.C. § 102

Claims 1 and 2 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,058,429 (hereafter referred to as "the Ames patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claim 1, as amended, is not anticipated by the Ames patent because the Ames patent does not teach determining whether or not a packet is entitled to access a particular service, nor does it teach making such a determination based on at least a portion of a unique bit string which replaced at least a part of a layer 2 address and which is independent of a layer 2 destination address. Claim 1, as amended, is reprinted below with these features depicted in bold typeface:

A method for provisioning services to packets sourced from a number of client devices, **each of the packets having at least a part of a layer 2 header replaced with a unique bit string that is independent of a layer 2 destination address**, the method comprising:

- a) **determining whether or not the packet is entitled to access a particular service using at least a portion of the unique bit string; and**
- b) if it is determined that the packet is entitled to access the particular service, then routing the packet. [Emphasis added.]

The Ames patent does not teach determining whether or not a packet is entitled to access a particular

service. The Examiner argues that the Ames patent teaches a step of determining whether or not a received packet is entitled to access server 104 based on at least the unique bit string -- being the data link layer destination address of the server 104. See Paper No. 7, page 3. The Examiner is interpreting the term "entitled" unreasonably broadly to include "addressing". The ordinary meaning of entitled is to furnish with a right. See, e.g., Webster's II: New Riverside University Dictionary, p. 435. (Copy filed herewith.) The applicants did not give the term "entitled" a contrary meaning. Since a user can address a packet however they please, merely determining whether or not a packet is addressed to a particular device is not the same as determining whether or not the packet is entitled to go to the addressed device. Therefore, claim 1, as amended, is not anticipated by the Ames patent for at least this reason. Since claim 2 depends from claim 1, it is similarly not anticipated.

More importantly, the Ames patent does not teach determining whether or not a packet is entitled to access a particular service using on at least a portion of a unique bit string which replaced at least a part of a layer 2 address and which is independent of a layer 2 destination address. The Examiner argues that changing, within a layer 2 header, the data link layer destination address of a router with that of a second device teaches replacing at least a part of a layer 2 header with a unique bit string. See Paper No. 7, page 3. Even assuming, arguendo, that this is true, claim 1, as amended, specifies that the unique bit string is independent of a destination layer 2 address. This new recitation is supported, for example, by

the exemplary embodiment illustrated by Figure 36 in which layer 2 source and destination address information is replaced by so-called "context information". Note that none of the context information depends on a layer 2 destination address. Therefore, claim 1, as amended, is not anticipated by the Ames patent for at least this reason. Since claim 2 depends from claim 1, it is similarly not anticipated.

In view of the foregoing, the applicants respectfully submit that this ground of rejection should be withdrawn.

Claims 1-4 and 13 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,959,989 (hereafter referred to as "the Gleeson patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 1 and 13 are not anticipated by the Gleeson patent because the Gleeson patent does not teach replacing a part of the layer 2 header with a unique bit string, nor does the Gleeson patent teach determining, using the unique bit string, whether or not a packet is entitled to a particular service. Claim 1 was already reprinted above with these features depicted in bold typeface. Claim 13 is reprinted below with the second feature depicted in bold typeface:

An apparatus for provisioning
services to packets sourced from a
number of client devices, each of the

packets having at least a part of a layer 2 header replaced with a unique bit string, the apparatus comprising:

- a) an access control list; and
- b) an access controller, the access controller including
 - i) means for determining whether or not the packet is entitled to access a particular service using
 - A) contents of the access control list, and
 - B) at least a portion of the unique bit string, and
 - ii) means for routing the packet if it is determined that the packet is entitled to access the particular service. [Emphasis added.]

The Gleeson patent does not teach replacing a part of the layer 2 header with a unique bit string. The Examiner argues that Figure 6 illustrates that the combination of MVLAN ID 612 and VLAN 620 show such a replacement. However, Figure 6, together with Figures 4A-4D of the Gleeson patent suggest that the MVLAN ID and VLAN are prepended to a packet 402a. Prepending information to a packet is not the same as replacing bits in a packet with such information. Accordingly, independent claims 1 and 13 are not anticipated by the Gleeson patent for at least this reason. Since claims 2, 3, and 4 depend from claim 1, these claims are similarly not anticipated by the Gleeson patent.

Further, the Gleeson patent does not teach determining, using the unique bit string, whether or not a packet is entitled to a particular service. As described above, the ordinary meaning of entitled is to furnish with

a right. However, in the Gleeson patent, membership in a multicast group is effected by a simple "join group" operation. See, e.g., column 8, line 59 through column 9, line 15. Merely electing to join or leave a group is not the same as entitling one to join or leave a group. Accordingly, independent claims 1 and 13 are not anticipated by the Gleeson patent for at least this reason. Since claims 2, 3, and 4 depend from claim 1, these claims are similarly not anticipated by the Gleeson patent.

In addition to not be anticipated by the Gleeson patent by virtue of its dependence from claim 1, independent claim 3 is not anticipated by the Gleeson patent because a multicast virtual LAN identifier does not teach a virtual private network organizational universal identifier.

Rejections under 35 U.S.C. § 103

Claims 5, 6 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Ames patent in view of U.S. Patent No. 6,104,700 (hereafter referred to as "the Haddock patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 5 and 14, as amended, are not rendered obvious by the Ames and Haddock patents because these patents, either taken alone or in combination, neither teach, nor suggest, determining a service level using at least a portion of a unique bit string which replaced at least a part of a layer 2 address and which is

independent of a layer 2 destination address. Independent claims 5 and 14, as amended, are reprinted below with this feature depicted in bold typeface:

5. A method for providing various quality of service levels to packets sourced from a number of client devices, **each of the packets having at least a part of a layer 2 header replaced with a unique bit string that is independent of a layer 2 destination address**, the method comprising:

- a) **determining a service level to which the packet is entitled using at least a portion of the unique bit string**; and
- b) forwarding the packet to a queue associated with the service level determined. [Emphasis added.]

14. An apparatus for providing various service levels to packets sourced from a number of client devices, **each of the packets having at least a part of a layer 2 header replaced with a unique bit string that is independent of a layer 2 destination address**, the apparatus comprising:

- a) a plurality of queues, each of the plurality of queues associated with a particular service level;
- b) a service level list; and
- c) a service level controller, the service level controller including
 - i) **means for determining a service level to which the packet is entitled using**
 - A) contents of the service level list, and
 - B) **at least a portion of the unique bit string**, and
 - ii) means for forwarding the packet to

the one of the plurality
of queues associated
with the quality of
service level
determined. [Emphasis
added.]

The Ames and Haddock patents, either taken alone or in combination, neither teach, nor suggest, determining a service level using at least a portion of a unique bit string which replaced at least a part of a layer 2 address and which is independent of a layer 2 destination address. The Examiner contends that (i) the Haddock patent teaches a forwarding device which determines quality of service levels based on a packet's IP (layer 3) address or its MAC (layer 2) address, (ii) the Ames patent teaches replacing at least a part of a layer 2 header with a MAC address (as a unique bit string), and (iii) it would have been obvious to use the MAC address of the Ames patent for determining a quality of service level as proposed in the Haddock patent. See Paper No. 7, page 5. Even assuming, arguendo, that this is true, such teachings when combined, don't show that the unique bit string is independent of a destination layer 2 address, as recited in claims 5 and 14, as amended. Indeed, the Haddock patent relies on destination information, and the Ames patent replaces layer 2 destination information of a current device with that of a next device.

As stated above, this new recitation is supported, for example, by the exemplary embodiment illustrated by Figure 36 in which layer 2 source and destination address information is replaced by so-called

"context information". Note that none of the context information depends on a layer 2 destination address.

In view of the foregoing, independent claims 5 and 14 are not rendered obvious by the Ames and Haddock patents. Since claim 6 depends from claim 5, it is similarly not rendered obvious by these patents.

Claims 5-8 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Gleeson patent in view of the Haddock patent. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 5 and 14, as amended, are not rendered obvious by the Gleeson and Haddock patents because these patents, either taken alone or in combination, neither teach, nor suggest, determining a service level using at least a portion of a unique bit string which replaced at least a part of a layer 2 address and which is independent of a layer 2 destination address. Independent claims 5 and 14, as amended, were reprinted above with this feature depicted in bold typeface.

The Examiner contends that (i) the Gleeson patent teaches replacing part of the layer 2 header with a unique bit string, (ii) the Haddock patent teaches a forwarding device which determines quality of service levels based on a packet's IP (layer 3) address or its MAC (layer 2) address, and (iii) it would have been obvious to combine the teachings of these two patents to provide various quality of service levels. See Paper No. 7, pages 4 and 6.

First, as stated above, the Gleeson patent does not teach replacing a part of the layer 2 header with a unique bit string. To reiterate, Figure 6, together with Figures 4A-4D of the Gleeson patent suggest that the MVLAN ID and VLAN are prepended to a packet 402a. Prepending information to a packet is not the same as replacing bits in a packet with such information.

Even assuming, arguendo, that the multicast virtual LAN ID and virtual LAN designation of the Gleeson patent could be characterized as a unique bit string that replaces at least some bits of a layer 2 header, the Haddock patent relies on layer 2 or 3 information, not multicast virtual LAN ID or virtual LAN designations to determine quality of service. Accordingly, if combined, these teachings would not provide the claimed invention.

In view of the foregoing, independent claims 5 and 14 are not rendered obvious by the Gleeson and Haddock patent. Since claims 6-8 depend from claim 5, they are similarly not rendered obvious by these patents. Regarding dependent claim 7, this claim is further distinguished over these patents because a multicast virtual LAN identifier does neither teaches, nor suggests, a virtual private network organizational universal identifier.

Claims 9-12 and 15 stand rejected under 35 U.S.C. § 103 as being unpatenable over the Gleeson patent in view of U.S. Patent No. 5,610,905 (hereafter referred to as "the Murthy patent"). The applicants respectfully request that

the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 9 and 15 are not rendered obvious by the Gleeson and Murthy patents because neither patent teaches determining whether or not a packet belongs to a group of packets to be copied for purposes of monitoring based on a unique bit string which has replaced at least a part of a layer 2 header. These claims are reprinted below with this feature depicted in bold typeface:

9. A method for monitoring packets sourced from a group of client devices defining a subset of client devices, **each of the packets having at least a part of a layer 2 header replaced with a unique bit string**, the method comprising:

- a) **determining whether or not the packet belongs to the group of client devices using at least a portion of at least one of the unique bit string**; and
- b) if it is determined that the packet does belong to the group of client devices, then
 - i) copying the packet to generate a duplicate packet, and
 - ii) forwarding the duplicate packet to a monitoring facility. [Emphasis added.]

15. An apparatus for monitoring packets sourced from a group of client devices defining a subset of client devices, **each of the packets having at least a part of a layer 2 header replaced with a unique bit string**, the apparatus comprising:

- a) a monitoring port for accepting packets of the group of client devices to be monitored;
- b) **means determining whether or not an accepted packet belongs to the group of client devices using at least a portion of the unique bit string; and**
- c) means for
 - i) copying the accepted packet to generate a duplicate packet, and
 - ii) forwarding the duplicate packet to the monitoring port, if it is determined that the packet was sourced by a client device belonging to the group of client devices.
[Emphasis added.]

Further, independent claims 9 and 15 are not rendered obvious by the Gleeson and Murthy patents because one skilled in the art would not have been motivated to combine these patents as proposed by the Examiner.

The Gleeson and Murthy patents do not teach determining whether or not a packet belongs to a group of packets to be copied for purposes of monitoring based on a unique bit string which has replaced at least a part of a layer 2 header. Presumably, the Examiner relies on the Gleeson patent for this teaching. However, as stated above, the Gleeson patent does not teach replacing a part of the layer 2 header with a unique bit string. To reiterate, Figure 6, together with Figures 4A-4D of the Gleeson patent suggest that the MVLAN ID and VLAN are prepended to a packet 402a. Prepending information to a packet is not the same as replacing bits in a packet with such information. Even assuming, arguendo, that such

prepended information could be said to replace layer 2 header information, it is clearly not used for determining whether or not to copy packets for monitoring -- it is used to define virtual LANS subscribing to multicast session. Independent claims 9 and 15 are not rendered obvious by the Gleeson and Murthy patents for at least this reason. Since claims 10-12 depend from claim 9, these claims are similarly not rendered obvious by these patents.

Further, one skilled in the art would not have been motivated to combine these patents as proposed by the Examiner. More specifically, the Examiner contends that (i) the Gleeson patent teaches copying a packet to generate a duplicate packet in the case when the packet is a multicast packet, (ii) the Murthy patent teaches a monitoring tool having a monitoring port for receiving a duplicate packet, and (iii) it would have been obvious to combine these teachings to enable monitoring. See Paper No. 7, page 7. First, as described above, the Examiner nowhere contends that either uses unique bit string information, which replaced at least a part of a layer 2 header, for purposes of determining whether or not to monitor the packet. Further, the Gleeson patent teaches away from copying packets, as occurred in prior art techniques, stating:

Although the prior art arrangement as described above is capable of delivering multicast messages to entities of diverse VLAN designations, it nonetheless has certain disadvantages. First, the arrangement requires that the same message be copied multiple times by the multicast router; one copy for each VLAN

associated with the message. In addition, each copy must be placed on the trunk line(s) linking the multicast router to the computer network. Depending on the number of VLAN designations associated with a given group multicast address, **this may severely compromise the throughput of this trunk line.** Multicast messaging may thus subject the network to **substantial performance penalties, limiting the benefits of having established virtual local area networks.** [Emphasis added.]

Column 5, lines 27-40. Therefore, independent claims 9 and 15 are not rendered obvious by the Gleeson and Murthy patents for at least this additional reason. Since claims 10-12 depend from claim 9, these claims are similarly not rendered obvious by these patents.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw this ground of rejection.

New claims

New claims 16 and 17 depend from claim 1, new claims 18 and 19 depend from claim 5, new claims 20-22 depend from claim 9, new claims 23-25 depend from claim 13, new claims 26 and 27 depend from claim 14, and new claims 28-30 depend from claim 15.

New claims 16, 18, 21, 24, 26 and 29 further define the layer 2 header information and the unique bits that replace at least a part of it. These claims are

supported, for example, by Figure 36 and the accompanying text of the specification.

New claims 17, 19, 22, 25, 27 and 30 further define the unique bit string and are supported, for example, by Figure 13 and the accompanying text of the specification.

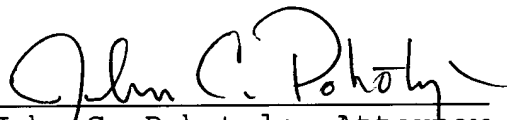
New claims 20, 23 and 28 further define the unique bit string and are supported, for example, by Figure 36 and the accompanying text of the specification.

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Respectfully submitted,

November 2, 2001



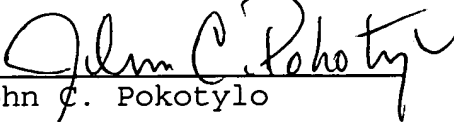
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John C. Pokotylo

Reg. No. 36,242



REPLACEMENT SHEETS WITH MARKED-UP VERSION OF CLAIMS PER 37
C.F.R § 1.121(c) (1) (ii)

1 1. (AMENDED) A method for provisioning services to
2 packets sourced from a number of client devices, each of
3 the packets having at least a part of a layer 2 header
4 replaced with a unique bit string that is independent of a
5 layer 2 destination address, the method comprising:

6 a) determining whether or not the packet is entitled
7 to access a particular service [based on] using at
8 least a portion of [at least one of (a) a layer 3
9 address of the packet, and (b)] the unique bit string;
10 and

11 b) if it is determined that the packet is entitled to
12 access the particular service, then routing the
13 packet.

1 3. (AMENDED) The method of claim 1 wherein at least a
2 portion of the unique bit string corresponds to a [VPN-OUI]
3 virtual private network-organizational universal
4 identifier.

1 4. (AMENDED) The method of claim 1 wherein at least a
2 portion of the unique bit string corresponds to a [VPN]
3 virtual private network-INDEX.

1 5. (AMENDED) A method for providing various quality of
2 service levels to packets sourced from a number of client
3 devices, each of the packets having at least a part of a
4 layer 2 header replaced with a unique bit string that is

5 independent of a layer 2 destination address, the method
6 comprising:
7 a) determining a service level to which the packet is
8 entitled [based on] using at least a portion of [at
9 least one of (a) a layer 3 address of the packet, and
10 (b)] the unique bit string; and
11 b) forwarding the packet to a queue associated with
12 the service level determined.

1 7. (AMENDED) The method of claim 5 wherein at least a
2 portion of the unique bit string corresponds to a [VPN-OUI]
3 virtual private network-organizational universal
4 identifier.

1 8. (AMENDED) The method of claim 5 wherein at least a
2 portion of the unique bit string corresponds to a [VPN]
3 virtual private network-INDEX.

1 9. (AMENDED) A method for monitoring packets sourced from
2 a group of client devices defining a subset of client
3 devices, each of the packets having at least a part of a
4 layer 2 header replaced with a unique bit string, the
5 method comprising:
6 a) determining whether or not the packet belongs to
7 the group of client devices [based on] using at least
8 a portion of at least one of [(a) a layer 3 address of
9 the packet, and (b)] the unique bit string; and
10 b) if it is determined that the packet does belong to
11 the group of client devices, then
12 i) copying the packet to generate a duplicate
13 packet, and

14 ii) forwarding the duplicate packet to a
15 monitoring facility.

1 11. (AMENDED) The method of claim 9 wherein at least a
2 portion of the unique bit string corresponds to a [VPN-OUI]
3 virtual private network-organizational universal
4 identifier.

1 12. (AMENDED) The method of claim 9 wherein at least a
2 portion of the unique bit string corresponds to a [VPN]
3 virtual private network-INDEX.

1 13. (AMENDED) An apparatus for provisioning services to
2 packets sourced from a number of client devices, each of
3 the packets having at least a part of a layer 2 header
4 replaced with a unique bit string, the apparatus
5 comprising:

6 a) an access control list; and

7 b) an access controller, the access controller
8 including

9 i) means for determining whether or not the
10 packet is entitled to access a particular service
11 [based on] using

12 A) contents of the access control list, and

13 B) at least a portion of [at least one of

14 (a) a layer 3 address of the packet, and

15 (b)] the unique bit string, and

16 ii) means for routing the packet if it is

17 determined that the packet is entitled to access
18 the particular service.

1 14. (AMENDED) An apparatus for providing various service
2 levels to packets sourced from a number of client devices,
3 each of the packets having at least a part of a layer 2
4 header replaced with a unique bit string that is
5 independent of a layer 2 destination address, the apparatus
6 comprising:

- 7 a) a plurality of queues, each of the plurality of
- 8 queues associated with a particular service level;
- 9 b) a service level list; and
- 10 c) a service level controller, the service level
- 11 controller including
 - 12 i) means for determining a service level to
 - 13 which the packet is entitled [based on] using
 - 14 A) contents of the service level list, and
 - 15 B) at least a portion of [at least one of
 - 16 (a) a layer 3 address of the packet, and
 - 17 (b)] the unique bit string, and
 - 18 ii) means for forwarding the packet to the one
 - 19 of the plurality of queues associated with the
 - 20 quality of service level determined.

1 15. (AMENDED) An apparatus for monitoring packets sourced
2 from a group of client devices defining a subset of client
3 devices, each of the packets having at least a part of a
4 layer 2 header replaced with a unique bit string, the
5 apparatus comprising:

- 6 a) a monitoring port for accepting packets of the
- 7 group of client devices to be monitored;
- 8 b) means determining whether or not an accepted
- 9 packet belongs to the group of client devices [based
- 10 on] using at least a portion of [at least one of (a) a

11 layer 3 address of the packet, and (b)] the unique bit
12 string; and
13 c) means for
14 i) copying the accepted packet to generate a
15 duplicate packet, and
16 ii) forwarding the duplicate packet to the
17 monitoring port,
18 if it is determined that the packet was sourced by a
19 client device belonging to the group of client
20 devices.

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